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# TERMS OF REFERENCE

# FOR CONSULTANCY SERVICES FOR END – USER AUDITING AND

# VERIFICATION OF SOLAR PV INSTALLATIONS

## 1. Introduction

The Government of [Country] has received funding from the [Donor] towards implementation of the Energy Project, and intends to apply part of the proceeds for consultancy services for End User Auditing and Verification of Solar PV Installations.

The [Project] Phase II project aims at scaling up investments in rural electrification and Information Communication Technologies (ICTs). Under [Project], the [Agency in charge of Rural Electrification] will implement the solar PV Targeted Market Approach (PVTMA) whose main focus is to scale up solar PV uptake through provision of consumer subsidies and promotion of consumer credit for PV to targeted markets. The efforts are expected to result in the installation of at least [Number] Solar PV systems in 4 years. The PV systems will be installed mainly through two modalities.

The 1st modality is through financial institutions regulated by the [Donor] and the 2nd modality is through unregulated institutions such as NGOs or other donors. In addition, there will be institutional and commercial PV installations made by solar companies either through cash and credit sales or fee-for-service basis. It’s estimated that over [Number] PV companies will participate in the program installing an average of [Number] PV systems per month.

The [Agency in charge of Rural Electrification] therefore requires the services of competent consulting firms to provide end-user auditing and verification services of PV installations that will be installed under the program for the duration of the program. All the Solar PV installations will be subject to audit and verification before disbursement of subsidies to consumers.

The assignment is in three lots distributed in the regions as follows;

I. Lot 1: [Region 1] It is anticipated that about [Number] solar installations will be made in this region at an average of [Number] installations per month.

II. Lot 2: [Region 2] It is anticipated that about [Number] solar installations will be made in this region at an average of [Number] installations per month.

III. Lot 3: [Region 3] It is anticipated that about [Number] solar installations will be made in this region at an average of [Number] installations per month.

## 2. Objective

The objective of this consultancy service is to provide end-user auditing and verification services of solar PV systems installed by PV companies through the program to enable the [Agency in charge of Rural Electrification] to disburse consumer subsidies.

## 3. Scope of Services

The Consulting firm will be required to physically inspect and verify PV systems installed by PVcompanies participating in program.

The PV companies shall provide detailed information about the installations they have carried out to the [Agency in charge of Rural Electrification] which information shall be entered into the PV data base and cross-checked with information from the audit/verification exercise before disbursement of the subsidy.

The Consulting firm shall be required to carry out the following activities.

1. Travel to the location where the PV system is installed and physically verify its existence.
2. At the site of the installation, the consultant will obtain the following information pertaining to the PV system by physically examining the installation and interviewing the consumer.

This activity will only be completed through the filling correctly and returning to the [Agency in charge of Rural Electrification] an installation report that should contain the following information:

* 1. Date of installation.
  2. Name of the consumer.
  3. Telephone contact of the consumer.
  4. Name of institution that provided the credit facility.
  5. Location of PV installation which shall include district, sub-county, parish and village.
  6. GPS coordinates of where the PV system is installed.
  7. PV system specification including array capacity in watt peaks (Wp), type, make and rating of solar module(s), charge regulation and battery(s), and load characteristics.
  8. Serial numbers of the solar module(s)
  9. Depth and quality of the end user training that was given to the end user by the PV company
  10. Confirm that the PV Company provided an end-user manual.
  11. Confirm that the consumer was provided with the contact address of the PV Company that installed the PV system.
  12. Confirm that an adequate explanation of the subsidy was given to the end user.
  13. Signed copies (by consumer) of data sheets for each consumer

1. In addition, the consulting firm will verify the following:
   1. That the PV components and installation meets agreed PV standards as prior approved by the [Agency in charge of Rural Electrification].
   2. That the components installed are the same as those indicated in the quotations/invoices.

For each of the inspected installations, the Consultant will put a sticker, marked ‘SYSTEM VERIFIED’ on accessible and fairly static component such as the charge controller.

## 4. Experience of the firm and Qualifications of Key Staff

The Consultancy is open to firms that have the following qualifications:

1. At least 3 years’ demonstrated experience in the design, installation and maintenance of solar PV installations for small and large systems (institutional and commercial)
2. Have local presence or at least a regional office/station in the region the firm is intending to work. The firm shall provide evidence of having a local office/agency in the region with the proposed personnel based in the region and shall include both physical address of the office and telephone contacts of the agency and proposed personnel for the services.
3. Have sufficient personnel with at least a certificate in electrical engineering and 2 years’ experience in PV system end-user auditing and verification or solar installation.
4. Have GPS equipment to record coordinates of a location.
5. Must NOT be currently participating in the PVTMA as a dealer.

The qualification requirements highlighted in (b)-(d) shall be an aggregate of the lots that the firm proposes to undertake; i.e. the firm shall have adequate capacity (personnel and equipment) to undertake the services in parallel in addition to having a local presence in each of the regions.

## 5. Contractual terms and obligations

The Consulting firm shall be offered a Contract for a period of one (1) year renewable subject to satisfactory performance. The assignment will necessitate travel to various parts of the region where PV systems will be installed. Remuneration shall consist of a fixed fee per PV installation audited. The consulting firm shall be responsible for covering all the attendant costs involved in the execution of the audit for each PV system installed.

## 6. Deliverables

The Consultant shall submit a bi-weekly Audit Reports when audits are done containing the following information foreach PV installation as highlighted above.